

I. AMENDMENTS

AMENDMENTS TO THE CLAIMS

Cancel claims 3 and 4 without prejudice to renewal.

Please enter the amendments to claims 1 and 2, as shown below.

Please enter new claims 30-39, as shown below.

1. (Currently amended) A glycosyl sulfotransferase sulfotransferase (GST) polypeptide present in other than its natural environment, wherein said GST polypeptide comprises an amino acid sequence having at least about 75% amino acid sequence identity to the amino acid sequence set forth in SEQ ID NO:8 glycosyl sulfotransferase is selected from the group consisting of GST 4 α , GST 4 β , and GST-6.

2. (Currently amended) The GST-4 polypeptide of claim 1, wherein said GST polypeptide comprises an amino acid sequence having at least about 85% amino acid sequence identity to the amino acid sequence set forth in SEQ ID NO:8 glycosyl sulfotransferase according to Claim 1, wherein said glycosyl sulfotransferase is a human glycosyl sulfotransferase.

3.-4. (Canceled)

5. (Withdrawn) A nucleic acid present in other than its natural environment, wherein said nucleic acid has a nucleotide sequence encoding a glycosyl sulfotransferase according to Claim 1.

6. (Withdrawn) A nucleic acid according to Claim 5, wherein said nucleic acid has a nucleic acid sequence that is substantially identical to or the same as the nucleotide sequence of SEQ ID NOS:01, 02, 03, 04, 05, 06 10, 12, 18, or 19.

7. (Withdrawn) A fragment of the nucleic acid according to Claim 5.

8. (Withdrawn) An isolated nucleic acid or mimetic thereof that hybridizes under stringent conditions to the nucleic acid according to Claim 5 or its complementary sequence.

9. (Withdrawn) An expression cassette comprising a transcriptional initiation region functional in an expression host, a nucleic acid having a nucleotide sequence found in the nucleic acid according to Claim 5 under the transcriptional regulation of said transcriptional initiation region, and a transcriptional termination region functional in said expression host.
10. (Withdrawn) A cell comprising an expression cassette according to Claim 9 as part of an extrachromosomal element or integrated into the genome of a host cell as a result of introduction of said expression cassette into said host cell.
11. (Withdrawn) The cellular progeny of the host cell according to Claim 10.
12. (Withdrawn) A method of producing a glycosyl sulfotransferase according to Claim 1, said method comprising:
 - growing a cell according to Claim 10, whereby said glycosyl sulfotransferase is expressed; and
 - isolating said glycosyl sulfotransferase substantially free of other proteins.
13. (Withdrawn) A monoclonal antibody binding specifically to a glycosyl sulfotransferase according to Claim 1.
14. (Withdrawn) The antibody according to Claim 13, wherein said antibody inhibits sulfation activity of said glycosyl sulfotransferase.
15. (Withdrawn) The monoclonal antibody according to Claim 13, wherein said antibody is a humanized antibody.
16. (Withdrawn) A method for inhibiting a binding event between a selectin and a selectin ligand, said method comprising:
 - contacting said selectin with a non-sulfated selectin ligand, glycosyl sulfotransferase according to Claim 1 and an agent that inhibits the sulfation activity of said glycosyl sulfotransferase.
17. (Withdrawn) The method according to Claim 16, wherein said agent is a small molecule.

18. (Withdrawn) A method of inhibiting a selectin mediated binding event in a mammalian host, said method comprising:

administering to said host an effective amount of a pharmaceutical composition comprising an active agent that modulates the sulfation activity of a glycosylsulfotransferase according to Claim 1.

19. (Withdrawn) The method according to Claim 18, wherein said active agent inhibits the sulfation of activity of said glycosyl sulfotransferase.

20. (Withdrawn) The method according to Claim 19, wherein said agent is a small molecule.

21. (Withdrawn) The method according to Claim 19, wherein said agent is an antibody.

22. (Withdrawn) The method according to Claim 19, wherein said active agent modulates the expression of said sulfotransferase.

23. (Withdrawn) A method of modulating a symptom in a mammalian host of a disease condition associated with a selectin mediated binding event, said method comprising:

administering to said host a pharmaceutical composition comprising an effective amount of an active agent that modulates the sulfation activity of a glycosylsulfotransferase according to Claim 1.

24. (Withdrawn) The method according to Claim 23, wherein said symptom is inflammation.

25. (Withdrawn) A method of diagnosing a disease state in a host related to the abnormal levels of a glycosyl sulfotransferase according to Claim 1, said method comprising:

determining the amount of an analyte in a sample from said host, wherein said analyte is selected from the group consisting of glycosyl sulfotransferase according to Claim 1 or a nucleic acid related thereto; and

comparing the amount of said analyte in said host sample to a control value.

26. (Withdrawn) The method according to Claim 25, wherein said determining is quantitative.
27. (Withdrawn) The method according to Claim 25, wherein said determining is qualitative.
28. (Withdrawn) A method of determining whether an agent is capable of modulating the activity of glycosylsulfotransferase according to Claim 1, said method comprising:
 - contacting a glycosylsulfotransferase according to Claim 1 with a sulfate source, an acceptor compound and said agent; and
 - determining the affect of said agent on said sulfotransferase activity.
29. (Withdrawn) A non-human transgenic animal model for gene function, wherein said transgenic animal comprises an introduced alteration in a gene encoding a glycosylsulfotransferase according to Claim 1.
30. (New) The GST polypeptide of claim 1, wherein said GST polypeptide comprises an amino acid sequence having at least about 90% amino acid sequence identity to the amino acid sequence set forth in SEQ ID NO:8.
31. (New) The GST polypeptide of claim 1, wherein said GST polypeptide comprises the amino acid sequence set forth in SEQ ID NO:8.
32. (New) The GST polypeptide of claim 1, wherein said GST polypeptide catalyzes the transfer of a sulfate group from a donor compound to an acceptor compound.
33. (New) The GST polypeptide of claim 1, wherein said GST polypeptide exhibits N-acetyl glucosamine-6-O-sulfotransferase activity.
34. (New) A glycosyl sulfotransferase (GST) polypeptide present in other than its natural environment, wherein said GST polypeptide is encoded by a nucleic acid comprising a nucleotide sequence having at least about 75% nucleotide sequence identity to SEQ ID NO:4.

35. (New) The GST polypeptide of claim 34, wherein said polypeptide is encoded by a nucleic acid comprising a nucleotide sequence having at least about 85% nucleotide sequence identity to SEQ ID NO:4.

36. (New) The GST polypeptide of claim 34, wherein said polypeptide is encoded by a nucleic acid comprising a nucleotide sequence having at least about 90% nucleotide sequence identity to SEQ ID NO:4.

37. (New) The GST polypeptide of claim 34, wherein said polypeptide is encoded by a nucleic acid comprising the nucleotide sequence set forth in SEQ ID NO:4.

38. (New) The GST polypeptide of claim 34, wherein said GST polypeptide catalyzes the transfer of a sulfate group from a donor compound to an acceptor compound.

39. (New) The GST polypeptide of claim 34, wherein said GST polypeptide exhibits N-acetyl glucosamine-6-O-sulfotransferase activity.